SUC-SESSION

DAS SPECTRUM - MAGAZIN

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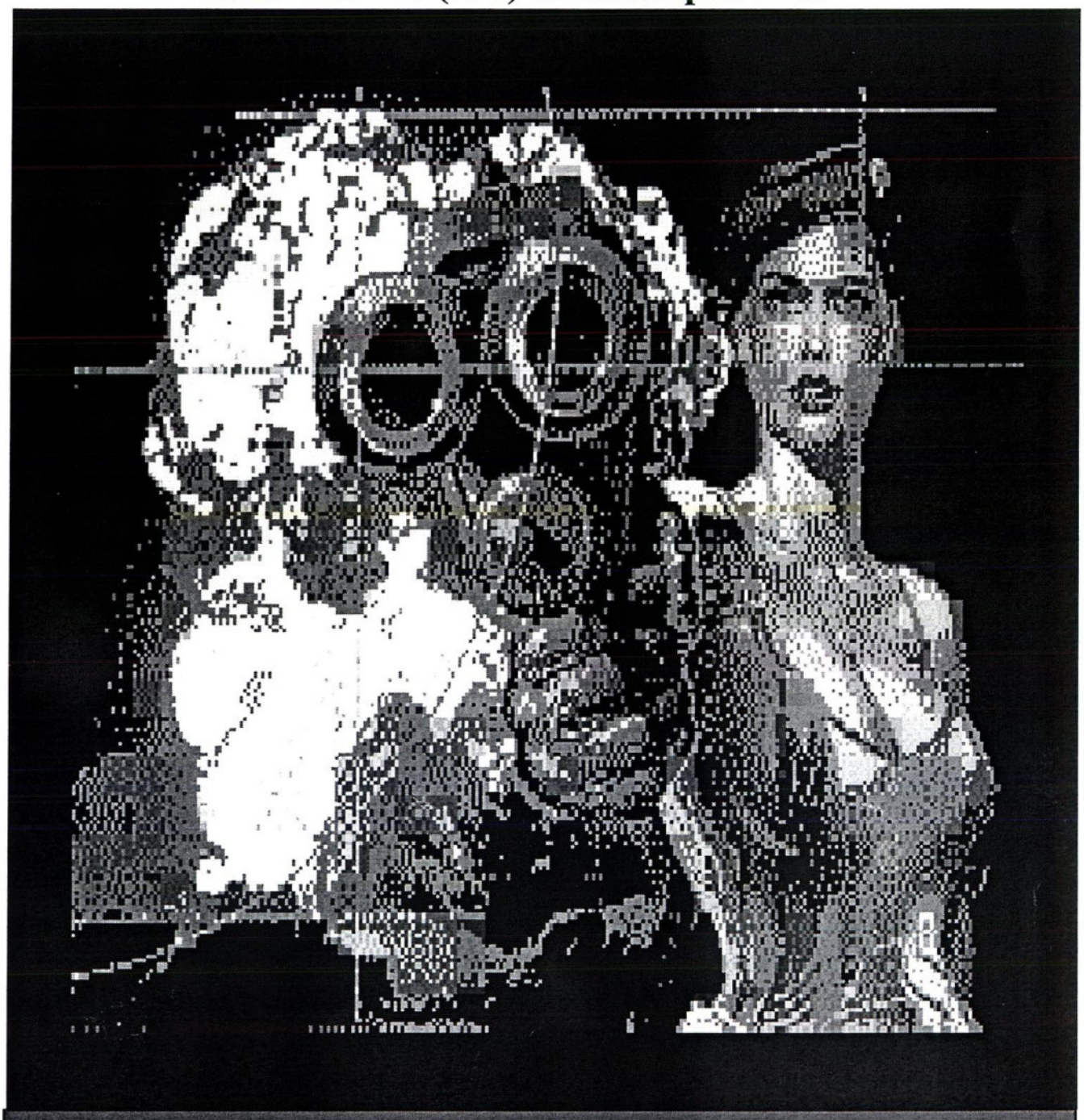

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Publisher

The Spectrum-User-Club, formally known as the Spectrum-User-Club Wuppertal, is the oldest existing Spectrum-Club in Germany, the ASC is the only Spectrum-Club in Austria. Since 1998 the Club-Magazine SUC-SESSION and SCENE+ have been sent together to all club members. They are compiled from contributions produced by the editor(s) as well as the readers. We call on all readers to send in their contributions as text files on cassette, +D, Opus, MB02 or MS-DOS (Word or pure Text files) or handwritten, per e-mail or printed on paper to us.

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How can you become a Member

Membership is basically free but the main services, the clubs magazine SUC-SESSION and SCENE+ can be subscribed to individually or together.

The Price:	Single issue	Yearly subscription (6x)
1) SUC-Session Magazine	3,00 Euro	16,00 Euro
2) SUC-Session Magazine as a PDF-Download	1,50 Euro	8,00 Euro
3) SCENE+ Disk-magazine	2,50 Euro	12,00 Euro
4) SCENE+ on Cassette	3,50 Euro	18,00 Euro
5) SCENE+ as a TAP-Download	1,50 Euro	8,00 Euro
6) Combi-packet SUC-Session & SCENE+ Disk	5,00 Euro	26,00 Euro
7) Combi-packet SUC-Session & SCENE + Tape	5,50 Euro	28,00 Euro

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New members who are ordering the Diskette version of SCENE+ should state the required format, we have available MB02+, Opus, +D und now also D80/Didaktik. If you are ordering additional Disk's or Cassettes together with a Combi-Packet then the price for these must be added to the Subscription number. Any questions should simply contact us per E-mail or under: 0049-711-775033.

Preface

Hallo dear Spectrum Fans

As you see we have managed to catch up on some of the time lost, not a lot of course. The work on SUC-Session has got more complicated. Firstly we create the German magazine and then the English and finally the download version is produced. This of course all involves extra time and although I have many helpers it's difficult with this schedule to catch up when we get behind. Never the less we have succeeded and this magazine will appear more or less on time.

One of our problems is that a lot of users don't send in their articles until they receive a copy of SUC-Session and it jogs their memories. If an issue comes out late then the articles for the following magazine arrive later and I have no chance to work more quickly. So my request: When you have anything, questions, articles, tips..... then send them at once, the quickest way is by E-Mail. The quicker I get the 24 pages filled the quicker the magazine can appear.

Of course when working under such time constraints more errors are sure to be produced. Especially the English readers suffered as I for example in the December issue forgot to change the Title page. So all readers were greeted by a German title page. By the way the staff of peace in the last issue wasn't meant as a political statement, I'd already chosen this picture before the Iraq war broke out. But it did certainly fit the moment.

I do of course take to heart the problems of our second magazine SCENE+. At least in a small part the readers of SUC-Session are impacted because at least those readers who subscribe to the cassette version get their magazine and cassette in one envelope. Which we do to save postage costs. If the SCENE+ is late then we can't send out the copies of SUC-Session to these readers and everything is delayed. For this reason it is especially important that we solve the problems. This problem is mainly with the Plus D Version:

- A diskette can only contain 80 files
- When working with the Real Spectrum Emulator we often get errors on the diskette which occur regularly just before the end of the diskette and make it unusable.

If anyone has a solution to this problem then please get in contact with us. Mirko has an MB02 but no +D so he has to work with the emulator but perhaps there is another more reliable emulator.

But that's enough about problems, the new issue is here, so dive in, enjoy the read and don't forget to send me those articles so that the magazine can continue to offer a wide spectrum of information.

Thomas

Readers Letters

The time has been really short, only a few days since I finished the last issue, the first of the year and then started on this the new magazine. The reason is of course the late appearance of the first issue and I really want to catch up on the lost time. The Easter holiday is the ideal time.... So lets get going.

In spite of the lack of time a number of readers have managed to write letters such as this one:

Hi Thomas,
Long time no hear but I have a question for you. I've just bought a Playstation (with boot chip) for my children. My question is do you know anything about a ZX Spectrum emulator that will work on the Playstation and how I could use this emulator.
I'd love to play the old Spectrum games on my Playstation.
Thanks very much.
Greetings
Ole

Greetings all the way to Denmark, Ole. I'm happy that we also have a number of readers in Northern Europe. I'm also pleased that under the Playstation users there are so many Spectrum fans, so that an emulator was written for it. Though to tell the truth it's not easy to create a CD for it, even though you can download the emulator free of charge from the World of Spectrum. Fortunately there is a specialist. Fred, well know and former editor of the SUC-Session has involved himself in depth with this subject and offers friends, self made Spectrum CD's. Such a CD for the Playstaion with the emulator and 20 Spectrum titles is available for small charge which because of the rules applied to us by the post office (see our article about the Post) we can't mention here. You may have to send him the 20 titles in PC format if he doesn't already have the 20 titles you would like. To find out more you should contact Fred by E-Mail and discuss it with him at fdmail@web.de **. Anyone who doesn't have E-Mail can send their questions to the editors of this magazine and we'll pass them on. It's very difficult to get in contact with him so telephoning makes no sense.**
I have a Playstation 2 myself and he was able to make an emulator for me to use on it.

There are a large number of Spectrum users in Holland. And once again one of them has decided in favour of our magazine, super.

Hello, it's me again.
I want to subscribe to the SUC-Session, but I've got a few questions. Can I get the older editions of SUC-Session? I'd really like to have them from the beginning. What would that cost, if I could get them all as a download? If I calculate the subscription for 24 years that would be 192 Euros. Though I hope I can get them a bit cheaper.
SCENE+ is not directly available for the Disciple, or? As far as I can remember the +D format is compatible with the Disciple, is that correct? If not then I would download them as TAP files.
I'm still interested in an MB03 but I have never heard anything about a +D-Project. Where is it being built? I expect in Great Britain.

Do you support people who offer self produced Sinclair Hardware and Software or do you prefer to sell things through your own shop? This is not any form of attack it's just that I will very shortly have my own homepage. Are you or the creator going to fore example publish the circuit diagrams for the Proface? I'm sure you don't produce it just to make money. Or have all these details already been published in SUC-Session.? Why do I only have questions...
I hope you don't mind all of my questions. As you see I'm again beginning a number of hobbies. They give me so much freedom that I'm full of enthusiasm.
Bye and thanks in advance, Benjamin Versteeg

Hallo Benjamin,
The English edition of SUC-Session is only 1 year old, before this the magazine was only available in German. The club has existed since 1982, but even I don't have all of the issues as I took over the club in 1994 (and even after this date many of the issues have sold-out). The on-line PDF version was first started in 2002. So the only thing I can offer you is a subscription chance for 2002. To ask the full price for a year which is past and done seems silly to me, for ... Euro you can have the passwords for all of old issues and for those to be published this year to download. Of course I can also offer you the SCENE+ though I don't know if you are also interested in past issue of this disk magazine. I think it should be possible to get the issues from the last 3 or 4 years as the magazine is not so old. The +D format is the same as the Disciple format. In fact the last issues were specially made for the Disciple but as I say the diskettes work with both interfaces it's simply a question of the appropriate BOOT-SYS file. You may have to boot from another disk that is all.
When it comes to Hardware projects I have always supported projects from all over the world without profiting in any way financially. I supported the MB02 project long before I thought about marketing it. But on the other side it would never have become as well known as it was without SINTECH, very few people would have bought it directly from the producer in the Czech Republic, especially as it would have been accompanied by many problems (how to send the money, how to get the hardware delivered). It was only because of my holidays in the Czech Republic that it was possible to bring the MB02 to Western Europe. If I calculated the transport costs I would have had to sell a couple of hundred more in order to recover my costs. But we don't calculate like that, not as fans.
In reality the +D clone is also an open project on the Internet. It just hasn't yet been possible to find someone who could be trusted to reproduce the product in an acceptable professional way. And in general it's true that the people who develop the hardware projects have little interest in managing the sales. So, that's what SINTECH is there to do, otherwise a number of projects would just disappear into the desk drawer. However I don't have anything against other suppliers, exactly the opposite, the Spectrum can only profit from the diversity. There's only one point where I have to disagree with you: The Proface was only produced to earn money, the Czech producer had almost no other reason to produce it, even if he didn't live exclusively from it's sales. Never the less the plans are available. But the GAL- chip is copyright.

Hello Thomas,
I received the new info from you today. I enjoyed it, it's always really good. No criticisms !!! but I missed the new Scene plus diskette (+D), did you forget it or have I misunderstood something ?

In any case I always enjoy it, can you tell me what's happening or simply send it.
Lots of greetings from the Eifel, Lothar

Hello Lothar,
We started sending Scene+ separately three issues ago. It's cheaper as the German post then handles the magazine as 'printed matter' with the diskette it's 'packet post'. The packet post costs 1,56 Euros while sending the magazine as 'printed matter' and the diskette as a letter cost 0.56Euros + 0,51Euros = 1,07Euros almost 50% saved. The Post really is stupid
As the SCENE+ appears later and later each time you can with a clear conscious give Mirko a boot in the behind. He sometimes needs a little motivation. The address and telephone number are in the magazine as usual. If he sees that people are missing the magazine he will be motivated and get to work on it.

A question about what has become almost rare hardware:
Hello I wonder if you can tell me what I need to put my Interface 1 to work. I mean, I know that I need a Microdrive but which cables do I need ?
I hope you can help me, thanks in advance.
Leigh Whitehead

In reality the Interface 1 is complete as it is and doesn't necessarily need a Microdrive to work. It has a serial port, a network and a Microdrive connection. Each of these interfaces has a corresponding cable which you can get from SINTECH. But if you want to know more I can only recommend that you read the users guide which you can also get from SINTECH.

Hello Thomas,
Can I ask some questions? I have bought a Spectrum 128K +2 and a Spectrum 128K +3, but my monitor cable doesn't work with both of them. It's a composite video cable for the Spectrum 128K which is connected to the RGB-Port. I've read some information about the Peritel (Scart) connections is it possible they have something to do with it ?
Greetings
Benjamin Versteeg

Hello, the Spectrum +3 doesn't have a Composite video signal, though the 128K does. For this reason it's possible that a Composite video cable won't work on the +3 or the +2A. Though it will work on the Spectrum 128 and Spectrum +2 (Grey case).
We've discussed these problems in many recent editions of SUC-Session and shown diagrams for a suitable cable both for the 128K and the +3. They are however RGB cables, which makes them a bit more complicated than a basic Composite video cable.
But also read our article about the new video modulator in this issue.

Encouraging words concerning the late arrival of the last issue, from Italy:
Hi Thomas, don't worry about the late delivery, I know it's not easy to do everything at once. There simply isn't time. Can you give me the link for SCENE+ so that I can take part in the competition.
I'll send some more comments about the magazine as soon as I've had a good chance to read it. But you should concentrate first on your exams. In Italy we have a saying before

any exam ' Into the jaws of the Wolf' and you should answer 'Let the Wolf die". Sounds rather strange but brings luck, so ' Into the jaws of the Wolf'.

Let the Wolf die, Fabio. I could do with some luck. But the exams are not going to come to an end any time soon. I've just finished the first part of my studies and will shortly be a 'Fachhandelswirt' (*In the German edition Thomas wonders how I'm going to translate that——errrrr dunno (don't know – now I'm translating my translations.....) Ian!). So the next round is starting but I will get through it, it's worked up till now.*

Manfred Striegler writes about an article from the last issue, something I wish more readers would do:
Hello Thomas,
- in the new issue of the magazine Martine-Arno was looking for some filter data: A filter for the 4.43Mhz colour carrier, this can be made with a tuneable 10uH inductor and a 150pf capacitor (the inductor can be obtained from ELV and has the number 6801552 and costs •2.33). I have however only used the filter to improve the synchronisation of a black and white monitor but it was successful. I would like to contact him about the HD-Interface and 3.5inch drive on the +3.

- As to the HD-Interface: The hard-drive interface from Mathias Scheurer (www.sinclairspectrum.de) is a copy of the HD interface ZXATASP from Sami Vehmaa (www.home.sol.se/amiga) and Garry Lancaster (Software Residos www.zxplus3e.plus.com/index.html). It is an IDE-IF for HD and CF cards. It can be used with all Spectrum models and can be used without an external power supply in two ways, either directly on the CPU socket or via the bus connector. There is also a battery buffered 512K RAM which can be used to store IF2 cartridge programs. In my opinion using a CF card provides a new dimension. I can't yet provide any practical information as I don't yet have the interface in operation. There are still a number of open questions. Perhaps the interface is already known in the club and someone can report on their experiences. Please write in!

- There is another possibility for connecting a VGA-Monitor to the Spectrum. There are multiscan VGA monitors (Ex. the model CMS 3436 from CTX (sometimes available on Ebay) or Microvitec), they support the CGA mode and because of the high quality of their cathode ray tube provide a very high quality picture without having to convert the signal with a VGA box first. With the CMS monitor it's even possible to choose between TTL-RGB and Analogue-RGB. You only need separate V and H sync TTL signals. The +2 could be connected directly. I haven't tested whether CSYNC (possibly with an increased voltage level) will sync the lines correctly as I don't have a +2. The +3 doesn't have a V sync output so this would first have to be filtered out of the CSYNC signal and raised to the TTL voltage level. This can be done with a simple sync-stripper www.homecinemapage.de or the circuit from the +2 could be used. It only needs a few components and could be mounted on a 15mmx20mm circuit board. Pin 4(Vsync) and pin 5(Hsync) can be used on the video socket for the outputs but first remove the resistor to the +12V supply and the Csync signal. You could put Vsync on Pin 1 and leave Csync on Pin 5.
It is worthwhile building a RGB output into any Spectrum (ex. a UVY-RBG converter – for example from Pera Putnik, http://members.tripod.com/~piters/uvyrgb.htm) as the conversion into the TV-Norm and then into VGA mode does have disadvantages. Of course there are also Multiscan TFT monitors with the CGA mode. So all wishes can be fulfilled if it

wasn't for the price. A number of TFT displays offer a video or S-video input alongside the VGA one. So the composite video signal from the Spectrum needs to be separated into Y- and C- signals which isn't so difficult and doesn't cause so much loss in signal quality as converting the composite video signal to VGA. The FBAS-Y/C converter from ELV could be used. Though I haven't yet built a AVY-RGB-Converter and no-one has yet given me a present of a TFT display with a video input, so I can't offer any practical experience. But I want to do something soon.
I take no responsibility for any of these ideas so whatever you try it's at your own risk.
Greetings Manfred

Hello Manfred, I'm hoping for a lot of interaction between readers about this subject. Please exchange your information via the magazine, or if this takes too long, provide details so that all readers can gain from the information exchange. The subject IDE interface and the RGB output are constant topics in SCENE+. Especially with the IDE it's impossible to know which one to choose, but time will tell. It's not enough just to bring an interface on to the market, that's been going on for 10 years now. What's important is the operating system and one that is compatible to the diskette systems. I don't want to have to first of all connect my HD to a PC to put programs onto it but want to be able to transfer programs directly from my diskette drives to the hard-disk. So far as I know there is to date only one solution which allows this and that is the IDE interface from TRITON with VDT for the MB02. I have been using it for a long time. It is not PC compatible and with a partition limit of 2MB could do with some improvements but it works.

LCD who is also an avid reader responds to a number of questions:
I would like to answer the readers letter from Liam:
Hello Liam, the +D is again defect, the Spectrum crashes, I know that today it's out of fashion to read the users guide but here a tip from me. When the program crashes, press 'y' if the picture is OK and 'n' if it is not (if I remember correctly or perhaps it's the opposite way round), then the storing of the data will continue. The Reason: The Spectrum can't tell which of the screens is active at the moment and so it asks the user, so that after the program is reloaded the correct screen will be displayed.
To Manfred and TFT Monitor:
I also have the Joymate from ELV and a 15" TFT monitor and here it all works really well, perhaps it depends on the monitor, it was one of the cheap 15" TFT's from IPC and cost me around 1150DM (about 380 pounds). Anyway it's been working for several months now and with very few problems (it's not always possible to detect the difference produced by BRIGHT, which can be cured by a quick switch to the PC-Signal and then back again), even the video recorder produces a super picture on the TFT. Greetings LCD

Benjamin is very interested and so has a question in store:
Hi Thomas,
Do you know how I can modify the +2 or +3 so that the sound can be heard via the television? I did read something about the frequency in Europe being 5.5Mhz and in Great Britain 6MHz.
Thanks Benjamin Versteeg

What! will be the response of many Brits, the sound does come via the TV. Yes, dear friends on the island it works for you. The Spectrum is after all a British computer

and has been set up for the British television standard. Our televisions here on the mainland are a little different but then at least we drive on the right side of the road.....
OK good, something is different. Some Spectrums (especially the 128K) were officially exported by Sinclair to Germany and with these Speccy's the sound signal can be heard via the television. I am fortunate in owning one of these Speccy's. But many users today buy their Spectrums in England and so have no sound via the TV. Who can let us into the secret? I would also be interested in this.

It's true that the British TV system uses a different sound separation to the rest of Europe. On the mainland it really is 5.5Mhz and in the UK 6Mhz. I haven't looked on the Spectrums but the modulator used on the SAM COUPE is the UM1286 and has several adjustments you can make. One of them changes the UHF frequency (picture will change to another channel) so you will have to reset it or retune your TV, the second is adjusted to stop the video buzz being heard via the loudspeaker of the TV and the third adjusts the tone separation and when adjusted can move the tone from 6Mhz to 5.5Mhz and lo and behold sound via the TV but be careful one of the adjustments is a ferrite core and is easily damaged so be carefull ... -Ian

News in Brief

FLASH BEER TRIOLOGY
The new game from the WSS-Teams for which there was a short introduction in April is going into the copying process very shortly. The long wait following the announcement was necessary to be able to calculate the numbers required. The WSS-Team has announced that it will bring the game out on Interface II cartridge. This game is not meant to be a one off, the WSS-Team is planning further games in the future. But they stress that they are not doing it for the money but for the Speccy!
Source: Edv of WSS-Team

Egg laying CRONOS
We have been informed by the Software house CRONOS that their new game EGGHEAD IN SPACE which was presented on the last SCENE+ is available to buy. This doesn't have any effect on us as we have the personal permission of the programmer Jonathan Cauldwell to publish the program on our diskette. If in spite of this anyone is interested to have the game in it's original version with the colour inlay and instructions then you can buy it at a low price at www.cronosoft.co.uk (sales only via the Internet).
This software house is looking for more good quality programs to sell, Hobby programmers can send their work to Cronos.
Source: S. Ullyatt, Cronosoft

New Album
The AY-Riders have published a new music album, all of which has been made with the AY-Sound chip of the Speccy. In practice it contains only Speccy songs. At the moment the work of the group is only available on the Internet and for free. Download from: http://ayriders.zxdemo.org .
Source: yerzmyey/h-prg+av_r

News in Kürze

Browser for the C-64
Difficult to believe: Spectrum users have been talking about it for decades, the C-64 a bit better with graphics the Speccy better for the programmers, and then this. The C-64 has a browser for the Internet. It's called CONTIKI and is available not only for the C-64 but also for systems such as the Atari XL/XE, Atari Jaguar, APPLE II, VIC20, NINTENDO ENTERTAINMENT SYSTEM, PC ENGINE, C116/Plus 4, CBM PET and C128. There are systems in this list where it's clear the Spectrum is more powerful. OK so the browser is restricted in it's functionality depending on the system but the wide range of platforms must mean that we will see a number of web pages in CONTIKI-Format. So you programmers get down to it, all of the code and information for the important areas is available under http://dunkels.com/adam/contiki/ . Take a look at how it's been done and finally get it translated for the Spectrum. It's certainly time that the Spectrum was also connected to the Internet.....
Source: Christof Odenthal

JPEG-Image Converter
The well known programmer ZILOG from the Czech scene has produced a new and interesting program. DITHYIDE converts JPEG graphics into photo like Spectrum screens using a special interlace mode. Unfortunately, this program is only available for LINUX at the moment. Which means most people will have to wait for the Windows/DOS version but you can get a good idea of what is possible on the pages from BLAZE:
http://zilog.sh.cvut.cz/~baze/dithwar/asterix.png
http://zilog.sh.cvut.cz/~baze/dithwar/lena.png

BMP2SCR Pro
LCD has brought out the latest Version 2.0 of his graphic conversion program. Anyone who thinks this program is only suitable for simple graphics needs to look again. The possibilities of this program are unequalled. It can even be used as a paint program. Anyone who doesn't know this program should download it from: http://lcd-one.da.ru/ or http://members.chello.at/ursula.chmielewski/
Source: LCD

Ethernet
Today every PC has an Ethernet adapter. For the Spectrum it's an accessory but thanks to a Swedish experimenter: Sami Veehma possible.
So with this the prerequisites for an internet presence for the Spectrum has been put in place, now it just depends on the software. Hopefully we won't have to wait too long. The Ethernet-Adapter is being offered on Samis homepage. But you can also find the circuit diagram there if you would like to try building it yourself (if you have the skill): http://www.home.sol.se/amiga/
Source: Icabod/raw.org

Computer Flea-market
Information for all ZX81 and Spectrum fans, I've searched for a long time trying to find an issue of the magazine 'Computer- Flomarktes'. Without success, and now I have discovered that it is for whatever reason only available on the Internet. So no longer is it a paper magazine. This is sure to be important for many members. Also I have noticed that in none of the columns are any of us represented. In the column for the Spectrum there is less and less we should try to use this forum otherwise the door will shortly be closed to us forever. The address: www.computer-flomarkt.de
Author and Source: Lothar Ebelshäuser

BMP > ZXS MultiTech Converter v. 1.00

Ni hao (Welcome) dear SUC-Session Reader.

Thomas has asked me as a sort of expert to take a look at the BMP > ZXS MultiTech Converter v. 1.00 from 8BC. As the name's rather complicated I'll use the abbreviation B2M, and for BMP2SCR Pro I'll use B2SP. I haven't chosen to compare it with the bloatware B2SP because I wrote it but rather because it is the program which is nearest to it in functionality, other than that there simply isn't any competition for B2M.

The first thing you notice even before you load the program is that it's only slightly over 500KB a real featherweight in comparison with the 8MB of B2SP which is still over 2MB even after it's been worked on by Winzip. The reason is easy to see, B2M has been compiled in C++ whereas B2SP was compiled using DarkBasic Pro which still has a couple of weaknesses, but that's not really the main point, much more important is the high level of demand that B2SP makes on the hardware, in comparison B2M which is satisfied when fed with much less power, it works with any windows version and any graphics card as long as the resolution is 1024x768 or more. B2SP requires Win98 or higher, DirectX 8.1 and a DirectX 8.1 compatible graphics card with at least 8MB memory.

After starting B2M you are presented with an empty file list, and from this you can choose a Bitmap file from any directory. After you have chosen a directory, a window opens in four sections, a slide control and a reset button are placed in the lower part of the window. So first you must choose a directory that contains some Bitmap images. As B2M works with a variety of BMP's it's time to begin experimenting. I should mention at this point that B2M can only import BMP's which is rather restricted but something you can live with. B2SP has the possibility to choose between BMP, JPG and PNG, as well as un-compromised AVI to convert animations.
After you have clicked on a file it immediately appears in the four section window. As a 1:1 representation of the Bitmap (Upper left), as a 256 grey scale picture (Upper right), as a Multitech Standard7216 v1.2 picture (Lower left) and as a Multitech Glory 2.00 image (Lower right), this needs it's own viewer as it is not compatible with the old Multitech viewer. The conversion is extremely fast and needs less than 25mS for both conversion windows, and the grey scale window. In comparison B2SP needs 140 ms on an Athlon 1200. One thing I did notice was the extremely poor quality of the Multitech 7216 conversion. I wanted to see this more exactly so I let B2M and B2SP run at the same time. The result was sobering. The Multitech 7216 conversion resulted in considerable block effects, when using B2M, whereas the Glory 2.0 Mode conversion looked quite acceptable, I couldn't see any real difference between a picture converted with B2SP for Multitech and one converted with B2M for Glory 2.0. Why that is I can only guess, I know that Martin Blazek knows some clever tricks, he helped me to improve the picture conversion for Multitech with the old BMP2SCR two years ago, so for that reason I find it so difficult to understand the result. He must have been able to produce a better quality of conversion than that which I was seeing, unless 8BC wants to force the use of the Glory mode no matter what. I don't want to create a false impression but compare the images for yourself. I don't know why the result looks so bad.
A number of the finer points from B2SP are completely missing B2M, as for example the colour image conversion, use of bright (You can only set the whole picture to bright or have

it turned off), Pre-processing (Dithering, diffusion). Most of these things are planned for future versions but aren't available at the moment.
The control of brightness and contrast is included in a very professional way and the calculations are done in real-time. The contrast control is better even than that allowed by B2SP.
As this is the first Version 1.0, then I can believe that newer versions will include features which I painfully miss at the moment (or would if I didn't use B2SP). And that the quality of the Multitech 7216 conversion will improve, anyway Glory 2.0 seems to be able to achieve what Multitech 7216 can, only Glory 2.0 is coded/scrambled somehow. Anyway the length of both files is always the same, with 12288 Bytes. If you had to buy B2M and B2SP then my choice would most certainly be for B2SP, as it has many more features. Luckily both programs are free and can be downloaded, that is B2M from http://www.8bc.com/sinclair/DOWNLOAD/index.htm and B2SP from http://lcd-one.da.ru .

Your LCD

B2M Conclusion:

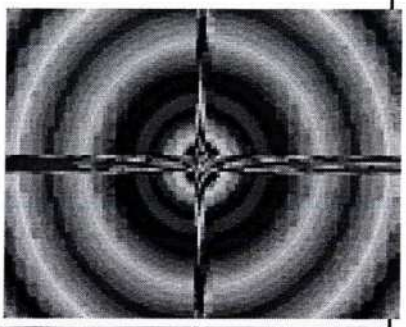
Positive:

- Low demands on the software and hardware environment
- Very small and fast
- RAW and MLT standard
- Two conversions at once, MLT/MLT Glory.
- Result can also be saved as a BMP.
- Clear and easy to control.

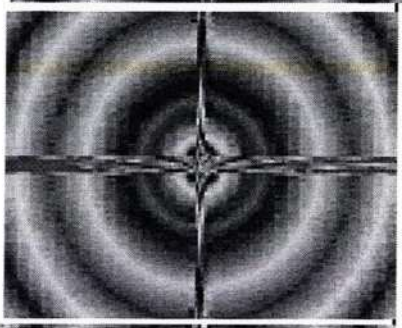
Negative:

- Minimum resolution of 1024x768.
- Embarrassingly poor quality with normal Multitech.
- No support for bright steps (but this is planned).
- No built in view for MLT (Saved pictures cannot be reloaded into the program).
- No Pre-processing for Dithering.
- No possibility to save as a TAP.
- Conversion of colour pictures not yet possible
- Only Multitech, Timex/Pentagon attribute order are not supported.
- Only BMP loadable.
- Multitech Glory 2.0 Viewer not included.
- RGB components not selectable
- MLT Editor not available, so small faults cannot be manually corrected.

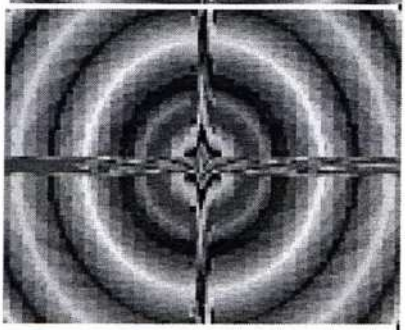
B2SP 1



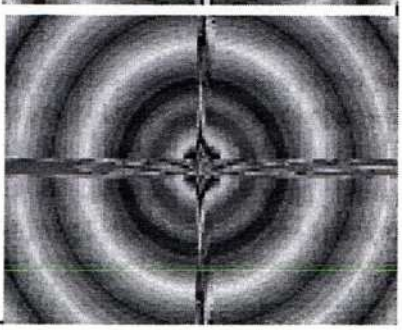
B2SP 2



B2M 7216



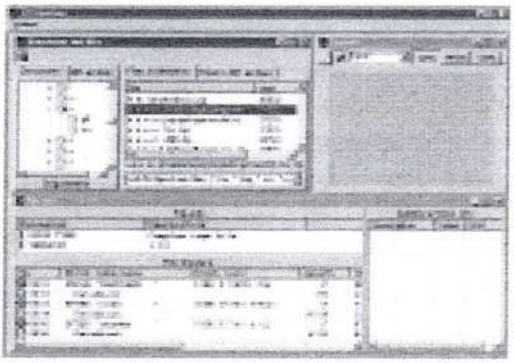
B2M G2.0



Stars on the internet

I'm really happy today as for the first time in the history of this section I have received lot's of tips for Internet pages which you should visit.

The first site that I want to present was not passed to me as a tip but as a recommendation by NEWS.RAWW.ORG. So I was very surprised to see the address:
http://home.t-online.de/home/seejay/spectrum/



This sounds like a German address, and it is but the creator is not known to me.
That was unexpected. The creator calls himself SeeJay and has written an emulator which I had also never heard of: ZX Rainbow and the pages are mainly devoted to emulation. On one page a new version of ZX Rainbow is mentioned, which of course sounds very interesting. Calling ZX Rainbow an emulator is really too general on this page it is more accurately called a 'File viewer system'. For example you can select various files and look at them, though you can't program as you can on the Spectrum. However it does recognise many different file formats and offers a preview. We await the windows version with anticipation. But the web site offers even more: an editor which integrates Spectrum graphics into text files (ex. instructions for a game), a list of all (or almost all) Spectrum emulators with a short description of their functions (very interesting) and some nostalgia for everyone. All in all a very interesting site for emulator lovers. Though it was a shame that there was no possibility to download ZX Rainbow from the site. There wasn't even a hint of where it could be found or whether it is freeware or shareware... there was also no E-mail address to be found or I would have asked.

Leszek brought me to another site, though it is completely in the Czech language.
http://www.zx.cz/speccy.php
Here you can find some diagrams and information on the Didaktik Gamma and Spectrum 128K. Really interesting is a circuit diagram for a multicolour graphic adapters. This sounds really good but unfortunately other than the title I didn't understand anything. OK, so I'm not very well up on electronics and the Czech language finished me off., but I have bought a Czech/German translation program and it will soon be put to use. Anyone who is interested should drop by this site.

Björn Eriksson isn't the only person in Sweden who work s with the Spectrum and to prove that he has given me the following link:
http://www.home.sol.se/amiga/
The address looks like it is a child of Commodore or ? But no, even though it looks like it, in reality it's purely a Spectrum site. We included a short report in the last issue that Sami Vehmaa from Sweden was working on various interfaces and one of them is now being sold officially: ZXATASP. There simply isn't enough space here to describe all of the functions of this interface but it includes 2 IDE ports for Hard-disks, connection for a COMPACT FLASH card, optionally up to 512K extra RAM, optional AY-Soundchip (für 48K users) and even a real serial interface ex. for Modems. There is software available, in the main an operating system for the hard-disks. So now it's not only possible for MB02 and +3

Users to make sensible use of a hard-disk. The price of 80 Euros for the ZXATASP seems to me to be about right when you look at what you get and you can believe the producer that he isn't making a profit.

In the main it's a modular system interface containing and IDE interface, serial card, Compact flash port and memory expansion. These modules can be bought separately and combined with each other. The site provides a description of each interface and the circuit diagram is available for download. So all of you hardware freaks can have a go yourselves but I would expect that most people would to order the interface.
Anyone who wants to see the whole thing should surf on over to this site, others we would recommend to wait until the first test reports appear. I of course hope that anyone in the club who builds or buys one will report on it in our magazine.

I really don't remember how I found out about this site but a recent use gives me a reason to introduce it to you:

http://members.fortunecity.com/jonathan6/egghead/index.html
The creator of this site is none other than Jonathan Cauldwell. What, there's someone out there who doesn't know who he is ? Jonathan made his name with a number of games, but he was best known for his releases on the cassettes in YOUR SINCLAIR (or was it SINCLAIR USER....). Even after the crash in the Spectrum commercial software market Jonathan continued to program for the Spectrum and sell the programs himself. Egghead and Haunted House are two of his best known titles and he uses his web pages to provide detailed information about them. It's great to see that Jonathan is still active in the scene....and how... his newest title EGGHEAD IN SPACE is on the SCENE+ this time and Jonathan would definitely be happy to see his program voted 'program of the year' even though that's not the reason he programmed it. In the past he earned a little money on the side from his programs but today he does it for no financial gain and they are freely available for download. We wait in anticipation for his newest project 'NO TEA, VICAR', it looks like a first class shoot-em-up game. There's already a Demo version available on his site. For all of those who think that the only first class software comes from Russia this site is a must.

So that's enough from me for now. I don't spend all night long every night surfing the Internet. So I hope that you won't disappoint me and send some new Internet addresses you have discovered.

TE

Replacing the Spectrum Plus keyboard folia

from Filipe Silva, Portugal

I suspect that the most common problem with the operation of the Sinclair ZX Spectrum Computer (48k, 48k+, 128k) was a defective keyboard. This problem (and others) were mostly cured through an improvement in quality, after Amstrad took over the Spectrum licence.
The first symptom is usually that some of the most used keys (Q, a, O, p, j) stop working and then it's not long before the keyboard stops working altogether. A lot of people don't even notice the problem as long as the J and P are working, then it's still possible to write LOAD "" , and as long as you use a joystick then it's possible to ignore the problem for a long time – unfortunately one day even these keys will cease working...
During my Spectrum-time it happened to me twice. The first time I swopped my 48K rubber keyboard for a 128K version and had a sort of 48K Plus. Unfortunately due to the quality of the keyboard folia and the intensive use it got it wasn't long before it took umbridge and I once again had non functioning keys. This time it took more than 10 years before I once again had a fully functioning 48K+.

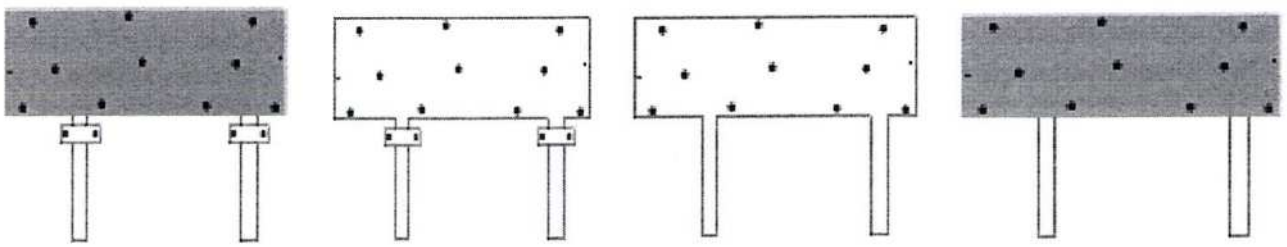
Is it still possible to buy a Spectrum-keyboard folia ? The answer is YES! – and with a much better quality than the original product. Simply visit the SINTECH On-Line shop (and you can of course tell Thomas where you got the Tipp from).

So how do go about changing a defective membrane? It really is a simple process –You just have to remove the defective membrane and install the new one. Here are the step by step instructions of how you do it:

Required material: Two screwdrivers – one with size 2 and then a small one (check the size carefully to prevent damaging the screw heads).

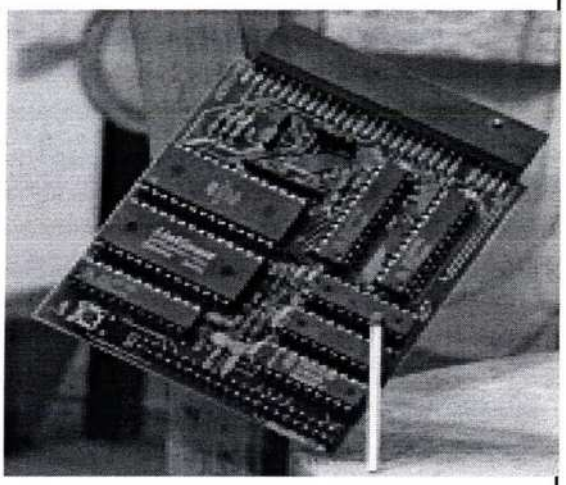
1) Remove the screws 6 + 1 from the rear of the Spectrum case with the larger screwdriver. You will have to remove the guarantee seal to get at the screw in the middle.
2) Turn the computer to face you in it's normal operating position and carefully lever up the upper part of the case.
3) You will see two flexible foil connectors between the keyboard and the Spectrum motherboard. Pull them carefully out of the motherboard being careful not to damage them and you can then totally remove the top section (containing the keyboard) of the case.
4) This top part with the keyboard is the section which interests us. This has a plastic section held in place by 10 screws. The foil bands which leave the membrane are held in place by 2 plastic bridges and 2 screws. We should now remove all 10 screws which hold the plastic part and remove it, see (Picture 1)
5) Now remove the 4 screws from the plastic bridges with the small screwdriver. Depending on the Spectrum model it's possible there may be sticky strips underneath which are there to protect the foil connectors. Now it's possible to remove the keyboard folia and the rubber keyboard mat. This mat can be cleaned up with damp cloth. And you should do the same with the plastic pieces (Picture 2)

6) Put the rubber mat back in (if you cleaned it with water then dry it well, first) and fit the new membrane to it. Check carefully that it is sitting in the correct position (Picture 3)
7) Screw the plastic part back using the 10 holes (Picture 4). If you washed it with water then make sure it is completely dry.
8) Fix the two keyboard foil connectors using the plastic bridges and screws. These should be screwed really tight more than the 10 screws on the plastic part). This needs to be done with care as if you screw them to tightly then the plastic fixing can be broken and is almost impossible to repair.
9) Connect the two sections of the Spectrum case together. Carefully reconnect the two folia connectors to the mother board (being especially carefull not to touch the contacts with your fingers). The widest of the connectors needs both hands. Make sure you don't knick the contacts as this can seriously damage the membrane. While doing this you should lean the upper part of the houseing against something as the folia connectors aren't very long.
10) Close the case, be careful that the fixing for the screws in the middle don't break off.
11) Switch the Spectrum on and check the keyboard. If one or more keys don't work you should repeat the procedure with particular care about the positioning of the membrane and don't screw the plastic cover too tightly to the membrane. If any of the screws are not correctly positioned and tightened the membrane will not function correctly. I've had more than enough experience of this.
12) Switch the Spectrum off again and put in the screws on the rear.
13) Switch the Spectrum on and check that the keyboard is still working correctly.
14) Pat yourself on the back for repair well done.



divIDE

Hello,
my name is Zilog and I come from the Czech Republic and I'm the inventor of the divIDE system for all ZX Spectrum models and Clones, that is as long as they have the original peripheral ports – OK, so there is an obscure Russian Clone that doesn't.....



In simple terms this interface will allow you to connect a CD ROM, Hard-disk or Compact Flash Card from a PC directly to your Spectrum. All of the data is preserved and is readable by your Spectrum through the divIDE interface. So you can use all of the comfortable facilities of an emulator (such as Snap, Tap, Poking, Memory image etc.) on the Spectrum.

The 8KB Flash-System doesn't use any of the Spectrum memory (as with Betadisk) and supports FAT16 format (Later it should also emulate CD-ISO9660, TRD and much more is to come). You can connect up to two IDE devices at the same time.

The first production run (30 units) have all gone. They were complete kits. For the next production run I only plan to offer the boards as it's possible to buy all of the other components over the counter, and the user can mount them his self.

BAZE is working a system for the whole thing. The contents of the SPLD can be downloaded from our homepage. Where you will also find a number of pictures and circuit diagrams.
http://zilog.sh.cvut.cz/~zilog/Screenshot/divide57x-prototype.jpg
http://zilog.sh.cvut.cz/~zilog/Screenshot/divide57x-board.gif
http://zilog.sh.cvut.cz/~zilog/Screenshot/divide57x-scheme.gif
http://zilog.sh.cvut.cz/~zilog/Documentation/pgm_model.txt
http://zilog.sh.cvut.cz/~zilog/cf_cmp.gif

My second product is called the cfIDE-Adapter and allows you to connect CF-Cards instead of a Hard-disk to the interface. CF-Cards don't need any power supply so they provide a small but super memory extension for the Spectrum.

Anyone who is interested should contact SINTECH so that we can jointly plan the numbers required.

Lots of Greetings

ZILOG
P.Cimbal@sh.cvut.cz

Forever Quattro - The 8 Bit Sceneparty in Trencin

A report from Florian Stadler
With additional information and comments from Leszek Chmielewski Daniel

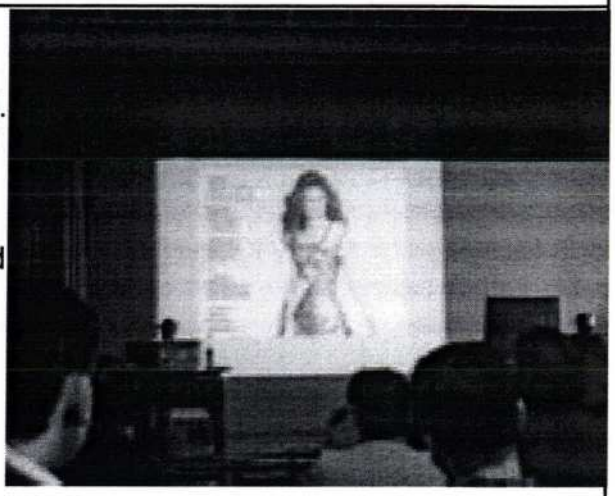
As in previous years I travelled together with Thomas Höger and Leszek Chmielewski Daniel to the Forever party in Slovakia (Trencin). We left LCD's place at about 1.20PM, Thomas and I were in my Camaro and LCD in his Scirocco. Right up to the Slovakian border everything went well but there they noticed the old Philips Monitor which LCD had with him which he wasn't allowed to 'import' into Slovakia. Anything older than 6 years is seen by them as electronic waste. He drove back to the customs to get a written permit but this didn't in the end work. Eventually he got through using a trick which we will not discuss more closely here.

Here just a short comment, it seems that a Pole had his C64 confiscated at the border, they think you are trying to dispose of 'Electronic rubbish' in Slovakia. It's rather like being stopped at the border with atomic waste and having it confiscated instead of letting it continue to the reprocessing plant. But enough of stupid laws.

With our 2 week Vignette we were at last allowed to continue on the motorway in the direction of Trencin. We arrived at about 5.10PM in Trencin. As we arrived we were greeted with an unexpected super scene: parked in from of the 'Odevna' school building were cars from all over the world, including a VW-Beatle from Germany. I immediately recognised from the wide stripe in the middle of the bumper that it was a relatively new model (Comment from LCD: You can see that Florien is a Beatle fanatic!).
Due to the lost time at the border we were late and the party was in full swing and we discovered that we had missed the 'Wild-Compo' during which a spectacular C16-Demo had been shown on the TV via a VHS tape and an Atarianer who had accompanied his demo on an E-Guitar. All of this information came from the Beatle-owner who I had immediately sort out soon after our arrival (turned out to be a 96er with cat+fuel injection – SUPER!!!)

Then I entered my BASIC program for the 1k intro program competition, which caused some problem for the organisers as they had difficulty loading it into their Spectrum. Then we paid our 6,- Euro entry fee and received our voting sheets and a pretty admission ticket. We had a look around, greeted a few old friends and then the presentation of the competitions began. Firstly the Real-time compo and then the Music-, Graphics-, 1k Intro and lastly the demo competition. There were plenty of Spectrums, around the same number of C64's and unfortunately somewhat less Atari's.

Musically it was the C64 which offered the most entries: 19 in all, the Spectrum only managed 12 (last year it was the Spectrum which had the most) and Atari 5. Strangely the Spectrum entries starting with the 10th were wrongly numbered, unfortunately that wasn't



the only error which the organisers suffered. As there were almost no Demos programmed for the Forever, the competition ended at about 10.30PM. And we took a look at a number of older Atari and C64 demo's which were being demonstrated, chatted with people from the C64 scene in Germany, played a couple of rounds on a C64 and in between packed our stomachs with the provisions which we had brought with us, while LCD admired the results of a new picture converter program from Zilog. Also there were a couple of girls at the party just like last year. Unfortunately LCD didn't let me talk him into putting together his Sprinter because he claimed there 'wasn't any space free', something I can't confirm, (but perhaps too little to take the Monitor and the Sprinter mini tower).
After I had discussed the basics of FLASH programming with LCD (Comment from LCD: that's the FLASH command in BASIC) and bank switching in BASIC., he showed Thomas and myself a couple of new Tap-Stream-Animations on his little notebook and then offered to introduce us to some of his relations in that he showed us pictures from a Birthday party once again on his notebook. Unfortunately all of his pretty cousins were either spoken for or were not good at speaking German (Comment from LCD: or still much too young).
Then we kept noticing Gasman who was still programming his new demo, which he wanted to have finished by midnight. But when a quarter past midnight arrived and it still wasn't finished, we were very tired and decided to retire. LCD slept inside while Thomas and I went out to the Camaro as we thought that the music would continue throughout the night. The announcement of the winners was planned for 6AM so we had asked Leszek to wake us in good time, which to his credit he did. Unfortunately the organisers slept for another couple of hours, so we had to while away the time watching the others sleep and with a couple of rounds of Tetris and Marioland on a Gameboy. Eventually at 9.30AM everything was ready and the announcements were made and the prizes distributed: LCD managed second place with his picture, what happened to my Intro you can read somewhere else. This time only the first places received prizes, plus two special prizes for the furthest travelled (Gasman from England and 'no idea of his name' from Russia).
After the C64 users had given away this and that from their Soft- and Hardware we said our goodbyes. LCD started his Scirocco only after hitting the starter motor with a hammer and at 10.30AM off we went in the direction of Vienna. As the weather was so fine LCD decided to show us something of Bratislava (or had he just taken the wrong turning again? Comment from LCD: Caught out again! the Slovakians obviously employ incompetents to decide their import laws and erect their street signs), we arrived home in about 3 hours. For the next day (early) we had planned an outing to the "Volkshilfe Wurfel", where LCD was hoping to get lot's of free computer bits... Including a very large Server, but that's another story.

flq

Always trouble with the post

After many years of sending the whole package of magazines first to Austria and then distributing them back to Germany it is simply no longer financially viable. It's true that the cost of sending the magazine and diskette from Austria is only around 1 Euro and that sending the same thing here in Germany costs 1.56 Euros but now that we send the magazine and diskette separately different rules apply and the cost is only 1.07 Euros, so that the diversion via Austria simply isn't worthwhile.

One of these rules is that the magazine is sent as 'Printed matter' and so has to abide by the rules for 'Printed matter' and this says that advertising is only allowed on the cover and on the two previous or two following sides. This is a rule which we have followed for years and the reason why the SINTECH advertising is only on the last pages of the magazine. Unfortunately in the last magazine we made a mistake. In the answer to the readers letter from Robert Doerfler I mentioned the price of diskette interfaces....oh horror....on page 14 in the middle of the magazine and promptly comes the reaction of the German post office. They really must have lot's of time available to go through the magazine and immediately find the readers letter. They consider it to be advertising and immediately decide that the postage paid is insufficient and send all of the magazines back to us. With that we didn't only have higher postage costs but also it meant the magazine arrived even later by the readers.

Please accept my apologies for this. I'll leave it up to you to decide whether you think the post was being a bit petty but in any case we will be very careful in future to keep within the rules to prevent such delays from happening again.
I can't however hold back a rye smile....clever post office.
te

Events Calendar

18th May 2003 Internaltional museum day; Events incl. Förderverein Comutermuseum Kiel e.V. More information at www.computermuseum.fh-kiel.de

6th June – 9th June 2003 Vision – C64 Party in Uetersen (Near Hamburg). More under www.protovision-online.de

14th June 2003 Meeting of the HCC-Sinclair-gg Holland in Bunnik. Further information www.hobby.nl/~sinclair-gg/duits/treffen.htm

28th and 29th June 2003 Z-Fest – the CPM experience in Fuldabrück-Knickhagen. Description on www.z-fest.de

23rd and 24th August 2003 Café 2003 party in Kazan. It's a multi-format party, catering for the ZX Spectrum, PC and Amiga

13th and 14th September 2003 Spectrology in Wittenberg, More info in the next issue of SUC-Session

20th September 2003 Meeting of the HCC-Sinclair-gg, Holland in Bunnik. More info under http://www.hobby.nl/~sinclair-gg/duits/treffen.htm

4th October 2003 Combined meeting of the Joyce AG and the SPC in Königswinter (Near Cologne)

18th and 19th October 2003 Elmshorner Computer days Multimedia/Computer-History/ Modding/Repair/Linux/Computer fleamarket and lots more. Information www.cceev.de

Hacker Alarm in the SUC-Session Editorial Office

I know, it's difficult to believe. It all started so harmlessly. LCD had drawn my attention to a thread in the comp.sys.sinclair newsgroup. There was a question from a user who's identity and mail address were unknown, but who really cheekily, simply calls himself CASHO asking if anyone can give him the passwords for the zipped files from SUC-Session. OK, he had downloaded them from the WOS server and perhaps didn't know that you have to buy the magazine. Peter de Vrommen, who isn't actually a reader, but who knows the scene, explained the situation to him. You have to buy SUC-Session from www.sintech-shop.de/home/spectrum-user-club.html. But he also provided the tip that there is a Crack program which will open the files for nothing.
And then it happened, just an hour later he'd cracked the first password 'alarm' and CASHO publicises it in the newsgroup. Great! Another user replies at once and is of the opinion that we didn't use a password so that someone else could publish it for all to read.

There is no reply from CASHO, he has disappeared. In it's place comes a nasty critical reply from Philip Kendall saying that anyone who uses such a weak protection for his files deserves nothing better and anyway it would be better if we didn't use any scrambling/coding.

Ah-ha, it's clear why should we use a password. Just because Philip genere II is against anything which costs money and is of the opinion that everything should be free. You would think these anti-capitalist words were coming from North-Korea or at least China, but no they are coming from the motherland of the Spectrum.

I think everyone reading this knows that we don't involve ourselves in all of this work for money. But we don't want to have to support it financially as well. OK, so the cost for maintaining the download archive are relatively low, but it does involve a lot of effort to maintain and the subscription from the Download magazine helps to support and cover the costs of the whole club (Ex. Also advertising).

As I say some people just don't want to understand and it's a waste of time trying to discuss with such people. There was a quick reaction from Martijn van der Heide who immediately packed all of the files into a new directory with an extra password. So for a time being the files simply weren't available as it was first necessary to set up the new links.

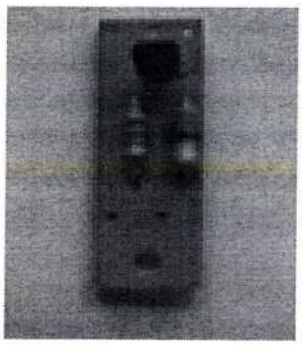
Really a pity, we thought that a simple form of protection would be enough but it simply isn't so.

We have seen that a far larger number of people have downloaded the SUC-Session than pay a subscription. Now we are not saying that all of them were successful in cracking the passwords and many of them may simply not have known what they were downloading. But never the less I think we must have a number of pirate readers and we are putting a stop to that in the interest of the honest readers.
te

A New Spectrum Product: VIDEO-Modulator

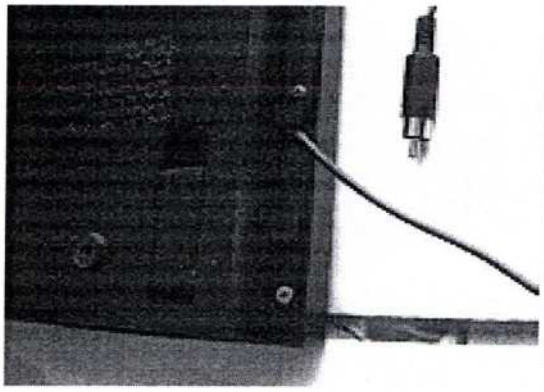
The discussion that was started about the Video-signal just grows and grows. For months there hasn't been an issue of the magazine without something on this subject. It started with constructing a monitor cable, then the VGA box. The 48K users were left standing around helplessly as they couldn't use either the monitor cable or the VGA box. The 48K Spectrum simply doesn't have a video socket. But wait, in the last issue there was the idea to simply extract the signal from the bus. It's even possible to get at the signal as it enters the TV-Modulator. But both modifications have inherent risks, for example if a short circuit was caused then the Spectrum could be damaged. A safer method is a circuit published in the SPC-Magazine for the ZX80 and later modified by Manfred Döring for the Spectrum.

This very similar circuit was researched on the internet and optimised by Robert Siegler. The result is a small circuit board which magically creates really super picture quality from our video signal.



The board is really small only 1 x 2cm and is easy to place within the case of any Spectrum. It needs 3 input signals: 5V, Video and Ground. The video signal and ground can be extracted from the inputs to the modulator. The signal is then cleaned up and amplified. A plus is that the circuit provides in practice a protection against short circuits, if anything happens then it's the circuit board which is damaged and not the Spectrum.

You solder a cable to the outputs, video and ground and on the other end put a cinch plug, the modification is complete and you have a perfect video picture. I've compared this signal with that of my RGB cable and truthfully I couldn't detect any difference, Robert has done a really super job.



This little circuit board costs 15 Euros (around 10 pounds). There is a version for the 48K and another for the +2a/+3 which do have an RGB connection but no Video signal.

SINTECH has taken over the sales for this VIDEO-Modulator and you can order it by telephone on 0049-711-775033 or via E-Mail at sintech@online.de.

The post takes longer but anyone who wants to can order one via this route as well:
SINTECH
Gastäckerstr. 23
70794 Filderstadt
Germany

te

Extraction from our pricelist:

Neu:	
PC-Power Supply with voltages for 2 Floppies and MB02	36,00 •
MB02-Printercable	13,00 •
IDE-Kit für MB02+ (ask for Harddisks and CD-Roms)	26,00 •
Spectrum +2A, new and in original box, complete	219,00 •
Didaktik Kompakt 48k	154,00 • KS
Diskinterface D80 + Flopppy for Didaktik or Spectrum	111,00 • KS
B-Drive for D80	60,00 • KS
Proface AT Extern (Keyboardi nterface to connect PC-Keyboard)	69,00 • KS
Proface AT intern	62,00 • KS
Melodik AY-Soundbox without case	21,00 • KS
Floppy drive (1860k for MB02, 720k for Opus, 780k f. +D) state type required	24,00 •
Power supply for +2A/B and +3 or for +2 (also 48k und 128k) state type	29,00 •
Floppy cable for 2 drives	4,00 •
Multiface 128 (also works on the 48k)	26,00 •
Multiface +3	46,00 •
Ink ribbon original STAR LC 10 double pack, 2 ribbons	11,00 •
Plus 3 cassette cable	9,90 •
+2/+3 Joystick Adapter	9,90 •
Spectrum +2 Lightpen	36,00 •
Spectrum +3 Lightpen	27,00 •
Silver paper for ZX Printer	5,00 •
Phaser-Pistole mit Software (Tape or +3)	19,00 •
Ersatzteile:	
+3 drive belt	2,00 •
Keyboard-Sticker for Spectrum / PC-Emulatoren	8,00 •
Keyboard membrane 48k	11,00 •
Keyboard membrane Spectrum +/128k, new Qualität, no aging, UV and heat resistent	21,00 •
4116 Memory IC	2,00 •
4464 Memory IC	3,00 •
Gebraucht:	
Sinclair ZX Spectrum 128k, complete with all cables	129,00 •
Sinclair ZX Spectrum +2, complete with all cables	79,00 •
Sinclair ZX Spectrum +2A, complete with all cables	69,00 •
Sinclair ZX Spectrum +3, built in 3" drive, complete with all cables	99,00 •
Sinclair Spectrum 48k komplett (Gummi), complete with all cables	64,00 •
Sinclair Spectrum 48k + komplett, complete with all cables	64,00 •
+3 Laufwerk (checked)	29,00 •
Interface I	69,00 •
Microdrive	25,00 •
Plus D Clone, without case,with 3,5" Floppy, cable + Power supply	129,00 •
Opus Discovery Diskinterface with 1 x 720k Drive	119,00 •
Joystickinterface 1-Port 3,00 • 2-Port	11,00 •
Joystick (various to choose froml)	2,50 •
Sinclair SJS-Joystick (+2/+3)	6,00 •
Microdrive Cartridges (ex-Software)	3,50 •
3" Disks for Spectrum +3 (ex-Software, 5 in one Pack)	19,00 •

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SCENE+ 56 Contens

SCENE+ 56 is not yet ready. To tell the truth not all of those who subscribed to SCENE+ 55 have yet received them. But it is guaranteed that everyone will get their magazine, it's just a question of time. To help correct this problem LCD will provide support with an Extra-issue to help get Mirko out of the mire. Christoph (alias ODIN) has written a new display routine which can also display graphics in the editor area. So as you see it is being continually modified and improved. We are also looking for a title tune which will be played in combination with the main menu. Anyone who has created a suitable song for example in SQ_Tracker or another tracker should send it in.

What exactly will be on SCENE+ 56 is not yet completely clear but as a minimum you can reckon on the following:

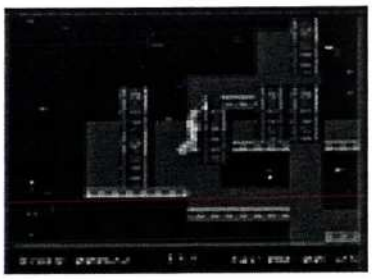
Intros:
Sabotage
SinBred
Zlo

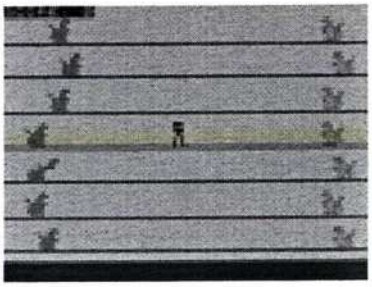
Games:
Bad Dream
ATKL (für Lightgun)
Ninja Commando (MB-02)
Games der crapgame-compo

4everIntros:
frob
Invad4q
Intro tg pink
Pisaas 1k
Robotanz 1k

Demos:
Sinusomania
X-Factor

Grafik/Sound:
4ever Graphix
4ever Sounds





NEW: As from issue 55 the Contents of the disk are shown on the rear of the envelope. If you cut this off above the disk, take out the disk and separate the front upper portion to the perforation then you can use it as a sleeve for the disk. The original idea was that I always wanted to have the printed 'contents' information together with the disk. Unfortunately with issue 55 something immediately went wrong, so that only half of the programs are actually in the 'Contents' list. However there is some spare space so everyone can add the rest of the list by hand.